

Comparison of clinical outcomes between Maastricht-III kidney donors >65 years old and donors after brain death: A single center, matched-pair study

Eur Urol Open Sci 2020;19(Suppl 2):e1594

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Introduction & Objectives: The inclusion of Maastricht Category-III (MIII) donors after circulatory death (DCD) has increased the donors' pool and, therefore, kidney transplants (KT). However, DCD have higher incidence of delayed graft function (DGF) compared to donors after brain death (DBD), being age one of its risk factors. Available data of using expanded criteria DCD is still controversial and conflicting in the current medical practice.

The purpose of this study was to compare aged DCD outcomes to DBD regarding DGF, graft and patient's survival.

Materials & Methods: We performed a retrospective observational matched-pair analysis of DCD >65 years old (yo) compared to DBD with minimum 1 year follow-up. Patients were matched according to donors' age (± 2 years), receptors' age (± 5 years), cold ischemia time (CIT) (± 3 hours) and type of storage (cold vs perfusion machine). Stata14 program was used for statistical analysis: Tstudent, χ^2 for descriptive analysis, logistic regression for DGF and Kaplan Meier survival curves.

Results: From 2013 until September 2018 152 MIII DCD KT were performed in our center. 74 DCD >65 yo were first selected, being able to evaluate 33 pairs (2 2nd KT and none were hyper-sensitized). Induction immunotherapy was similar for all groups. Age, CIT and type of storage were comparable between groups. DCD receptors' mean age was 68.4 (CI95% 66.1–70.7) and 68.2 (CI95% 65.9–70.5) for DBD. DCD donors' mean age was 73.5 (CI95% 71.6–76.4) and 73.9 (CI95% 72.1–75.8) for DBD. Median DCD CIT was 16.8 (IQR 11.8) hours and 16.6 (10) for DBD. DCD increased DGF with a relative risk (RR) of 1.286 (CI95% 0.76-2.17) and longer DGF was reported in this group ($p=0.0578$). No differences were seen regarding graft failure ($p=0.314$) and mortality ($p=0.057$).

Comparison of graft survival between DCD and DBD at 12 months showed no statistically significant differences: 88.9 (CI95% 69.4-96.3%) for DCD with 50 months median follow-up and 96.9 (CI95% 79.8-99.6%) for DBD with 90 months median follow-up ($p=0.5379$). Death-censored graft survival at 12 months was 92 (CI95% 71.6-97.9%) for DCD with a median follow-up of 54 months and 95 (CI95% 69.5-99.3%) for DBD with a median follow-up of 95 months ($p=0.347$). Patient's survival at 12 months was 93.3 (CI95% 75.9-98.3%) for DCD group and 100% for DBD group ($p=0.9848$).

Conclusions: Although comparison of MIII DCD older than 65 yo to age-matched DBD showed an upward trend to DGF in our series, no statistically significance difference was found among them. Moreover, graft and patient's survival were comparable. However, due to the reduce size of our sample, larger and prospective studies should be carried out to confirm our findings.